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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/348,165	07/07/1999	AKIRA NAKAGAWA	826.1553/JDH	4844

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STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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WONG, ALLEN C

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/348,165	<b>Applicant(s)</b> NAKAGAWA ET AL.	
	<b>Examiner</b> Allen Wong	<b>Art Unit</b> 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5 and 11-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 is/are allowed.
- 6) ☒ Claim(s) 11-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed 6/29/04 have been fully read and considered but they are not persuasive.

An interview was conducted on June 28, 2004, and after further consultations and consideration of the pending claims, the reasons for maintaining the rejection in response to the applicant's remarks are discussed below.

Regarding lines 15-17 on page 8 of applicant's arguments, applicant discloses that Yagasaki does not teach the motion vector prediction based on motion vectors of blocks adjacent to the target block. The examiner respectfully disagrees. As stated before in the previous Office Action, Lynch discloses the predicting means for predicting a motion vector of a target block based on motion vectors of a plurality of blocks adjacent to the target block, as disclosed in fig.17 and col.10, ln.23 to col.11, ln.4, where the "PREDICTION" or the prediction of the motion vector is predictively done, and that fig.14 shows that the target block motion vector was predicted for accurately predicting the image data, especially in the MPEG interframe encoding/decoding environment when obtaining the motion vector between a current frame and a reference frame. Also, Lynch's fig.5 discloses that a frame with the shaded area of interest has, for instance, four blocks that are obtained, utilized for predicting a motion vector.

Yagasaki was used for further supporting the teachings of Lynch in that Lynch does not disclose the prediction of a motion vector values of blocks

Art Unit: 2613

adjacent to the target block of the same frame, but Yagasaki teaches the motion vectors of adjacent blocks to the target block in the same frame are implemented for obtaining a predicted motion vector, as disclosed in col.18, ln.1-13. Further, in Yagasaki's fig.1A, one can observe the frame's target block is in the center and in fig.1B, the motion vector is obtained, where there are more than two blocks used. Besides, the term "plural" is defined as of, relating to, or constituting a word form used to denote more than one". So, two or more is the definition of plural ((c)2000 Zane Publishing, Inc. and Merriam-Webster, Incorporated). Certainly, Yagasaki teaches that its teachings can be modified by one of ordinary skilled in the art (col.22, ln.3-10). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lynch and Yagasaki, as a whole, for accurately predicting motion vectors so as to efficiently produce clear, high quality images for viewing and saving financial costs (Yagasaki col.3, ln.54-61).

Regarding lines 14-17 on page 9 of applicant's remarks, applicant asserts that Lynch does not disclose the determining the accuracy of the prediction based on degrees of non-uniformity of the motion vectors. The examiner respectfully disagrees. As previously stated, col.11, ln.18-22 and fig.17,note "MODE" is determined and motion vector calculator 111 determines the prediction accuracy based on non-uniformity of the plural motion vectors. And, Lynch discloses that there are plural, different motion vectors moving in different directions, as disclosed in col.3, ln.18-22, so, Lynch suggests the calculation or determination of the accuracy of the prediction based on degrees of non-

Art Unit: 2613

uniformity of the motion vectors to properly determine the interframe pictures during prediction. Further, Yagasaki also teaches the need for providing a method for coding/decoding image data with determining accuracy of the prediction of images with various degrees of motion vectors, different motion vectors (ie. non-uniformity of plural motion vectors), as disclosed in col.3, ln.54-61. Thus, the teachings of Lynch and Yagasaki meet the broad limitations of the claims.

Regarding the last paragraph on page 9 of applicant's remarks about the dependent claims, the dependent claims are rejected for the same reasons as discussed in the above paragraphs and in the rejection below.

Furthermore, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Since both Lynch and Yagasaki pertain to the same video encoding/decoding environment, it is reasonable to combine the teachings together as a whole for producing the present invention.

The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to

Art Unit: 2613

one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Also, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Since both Lynch and Yagasaki pertain to the same video encoding/decoding environment, it is reasonable to combine the teachings together as a whole for producing the present invention.

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Regarding lines 18-20 on page 9, applicant states that the examiner recognizes that the present invention is patentably distinctive over Lynch and Yagasaki. As stated in the interview summary, the examiner considered the discussion of the teachings of Lynch and Yagasaki, but never indicated the present invention is patentably distinctive but appears to be distinctive, "Attorney Beckers discussed Lynch and Yagasaki and pointed out the differences versus the present invention that appears to be distinctive over the references, but further search and consideration is required." The examiner has taken all of the information and discussions into consideration, and have explained the reasons for maintaining the rejection in the above paragraphs and the rejection below.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to

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Art Unit: 2613

be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 11-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch (5,198,901) in view of Yagasaki (5,428,396).

Regarding claim 11, Lynch discloses a motion vector decoding device for decoding an encoding result which is obtained by encoding motion vectors of respective blocks obtained by partitioning each frame of moving image data, comprising: predicting means for predicting a motion vector of a target block based on motion vectors of a plurality of blocks adjacent to the target block (fig.17, note "PREDICTION" is done, where in col.10, ln.23+, motion vectors are predicted, also, fig.5, Lynch illustrates a frame with a shaded area of interest, where the information from the four blocks are obtained and utilized for predicting a motion vector); determining means for determining accuracy of a prediction made by said predicting means based on degrees of non-uniformity of the plurality of motion vectors (col.11, ln.18-22 and fig.17, note "MODE" is determined, also note fig.17, element 111); and decoding means for decoding the motion vector of the target block by using a result of the prediction made by said predicting means with a decoding method determined based on a result of the determination made by said determining means (note fig.17, element 98 is a decoding means, a variable length decoder).

Although Lynch does not specifically disclose the prediction of a motion vector is based on motion vector values of blocks adjacent to the target block of the same frame, however, Yagasaki teaches the prediction of a motion vector is

Art Unit: 2613

based on motion vector values of blocks adjacent to the target block of the same frame (col.18, ln.1-13, Yagasaki discloses that motion vector values of adjacent blocks to the target block in the same frame are utilized for determining a motion vector). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Lynch and Yagasaki as a whole for accurately predicting motion vectors so as to efficiently produce clear, precise images for viewing and saving costs.

Note claims 12-13 and claims 20-22 have similar corresponding elements. Also, note dependent claims 14-16 are rejected for the same reasons as set forth above for independent claims 11-13.

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Regarding claims 17-19, Lynch discloses the plural decoding means (col.10, ln.47-48, Lynch discloses that motion compensation can be done in numerous ways as shown in figs.12, 15 and 16, where the decoding of the motion vector can be done in several ways, thus implies there are multiple ways of decoding) and the selecting means (col.11, ln.18-22, Lynch discloses the mode information is used for applying the proper decoding means).

Regarding claim 23, Lynch discloses the determination of the first absolute value of difference, the second absolute value of difference and the third absolute value of difference (in fig.17, note BMv, FMv and FMv from AO Mv calculated result are the first, second and third motion vector values used for obtaining the first, second and third absolute value of difference, where the values are compared with the threshold in elements 104 and 105 to see if the absolute value of differences are accurate).



Art Unit: 2613

***Allowable Subject Matter***

1. Claim 5 is allowed.
2. The following is a statement of reasons for the indication of allowable subject matter: the applicant has rewritten claim 5 into an independent form such that the current claim 5 incorporates the previous limitations of the claim 1. Since there are no prior art references that teach or suggest the combination of limitations as disclosed in the current claim 5, it is considered patentable.

***Conclusion***

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (703)

Art Unit: 2613

306-5978. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (703) 305-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen Wong  
Examiner  
Art Unit 2613

AW  
11/15/04